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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,185	03/30/2004	Yoshiharu Fujioka	008312-0309000	3331
909	7590	12/20/2005		EXAMINER
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			LEE, JOHN D	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,185	FUJIOKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John D. Lee	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 1-7,9-11,12/9,13-19,21, and 22/21 is/are allowed.  
 6) Claim(s) 8,12/8,20, and 22/20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 30 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                           |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                      | Paper No(s)/Mail Date. _____.                                               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0304</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                           | 6) <input type="checkbox"/> Other: _____.                                   |

Art Unit: 2874

Receipt is acknowledged of papers submitted under 35 U.S.C. §§ 119(a)-(d), which papers have been placed of record in the file.

The six (6) sheets of drawing filed in this application on March 30, 2004, are acceptable.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 12/8, 20, and 22/20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,879,604 to Cook. Cook discloses a Raman type laser resonator which (due to the Raman effect involved therein) converts the wavelength of an incident light into other Raman scattered wavelengths. As seen in various ones of the Figures, and in cross-section in Figure 6, Cook's laser/converter is in the form of an optical waveguide formed on a plate-like first optical member and covered by a second plate-like optical member. As is conventional, the refractive indices of the lower and upper optical members **10, 30** are lower than the refractive index of the waveguide **18**. The waveguide can have just about any shape, including coiled, curved, straight-portioned, etc. The waveguide shapes shown in Figures 2, 5A, and 9 of Cook would suggest to one of ordinary skill in the art that a zig-zag shape for the waveguide is a

viable alternative. Such a zig-zag patterned shape would thus have been obvious. The waveguide itself functions according to the principle of "total internal reflection", meaning that there are an infinite number of "reflective portions" therealong, so that Cook meets applicant's claim limitation "the laser light incident upon the excitation medium is reflected in the plurality of reflective portions". Finally, although Cook does not specifically disclose that the excitation medium (Raman optical waveguide) is doped with rare earth metals, it is known in the art that some rare earth doped waveguide materials function as Raman media. The use of a rare earth doped optical waveguide in Cook would therefore have been obvious to a person of ordinary skill in the art. The particular process by which the layers **10, 18, and 30** of Cook are stacked together is not disclosed, but any known process could certainly be used. The use of a photoetching process would thus have been obvious to the ordinarily skilled artisan.

Claims 1-7, 9-11, 12/9, 13-19, 21, and 22/21 are allowed. Independent claims 1 and 13 differ from Cook because they require a specific stacking arrangement and first, second, third, and fourth optical members to form a rectangular parallelepiped structure, along with the recited first and second reflective members at opposite end surfaces. Independent claims 9 and 21 differ from Cook because they require a single stroke, rare earth doped, plate-like waveguide to be sandwiched between first and second optical plate-like members, along with first and second reflective portions at opposite end surfaces to form a laser resonator structure. The remaining indicated allowable claims depend, either directly or indirectly, from these four independent claims, and are thus

allowable for the same reasons. Like Cook, none of the other cited prior art documents disclose or suggest these claimed combinations of features.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other rare earth metal-doped optical excitation media (most of which are in waveguide form), and which have geometrical structures somewhat similar to applicant's claimed structures, can be seen in the cited U.S. Patents to Abrahams et al, Amano, Chwalek et al, Meissner et al, Hackel et al, and Trussell, Jr.

All three (3) of the documents listed by applicant in the Information Disclosure Statement filed on March 30, 2004, have been considered and made of record (note the attached initialed copy of form PTO-1449).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. §§ 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to

the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

*John D. Lee*  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**